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COLD CATHODE ELECTRON FIELD EMITTERS BASED ON SILICON CARBIDE STRUCTURES

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Abstract

A cold cathode field emission electron source capable of emission at levels comparable to thermal sources is described. Emission in excess of 6 A/cm2 at 7.5 V/μ;m is demonstrated in a macroscopic emitter array. The emitter is comprised of a monolithic and rigid porous semiconductor nanostructure with uniformly distributed emission sites, and is fabricated through a room temperature process which allows for control of emission properties. These electron sources can be used in a wide range of applications, including microwave electronics and x-ray imaging for medicine and security.

Inventors

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References

- Published Patent Application

Status of Availability

This invention is available for licensing exclusively or non-exclusively in any field of use.

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